EPA Responses to Comments for TMDLs in the Red River, Sabine River, and Terrebonne Basins, Louisiana

Prepared for:

United States Environmental Protection Agency, Region 6
Water Quality Protection Division
Permits, Oversight, and TMDL Team
Dallas, TX 75202

Contract Number 68-C-02-108
Task Order 96

Prepared by:

Tetra Tech, Inc.
10306 Eaton Place, Suite 340
Fairfax, VA 22030

September 20, 2006

CONTENTS

1. RESPONSES TO PUBLIC COMMENTS

1. Comment Letter #1

RE: Request for comment period extension on 85 Louisiana TMDLs
From: Briana Kerstein [b_kerstein@yahoo.com]
Date Received: 8/9/06

Dear Ms. Smith
As a citizen concerned about local water quality and how the United States Environmental Protection Agency proposes to clean up polluted waters, I respectfully request a 60-day extension to the comment period for the 85 TMDLs prepared by EPA Region 6 for waters listed in the Red River, Sabine River, and Terrebonne Basins of Louisiana, announced in the Federal Register on July 20, 2006.

In order for there to be meaningful public comment on these TMDLs, there must be adequate time for each one to be analyzed. The fact that all 85 TMDLs are in seven documents makes reviewing the TMDLs more difficult and time consuming. In order to thoroughly analyze and tease out information for each TMDL it will take a significant amount of time and effort, extending past the current comment deadline of August 21.

While I appreciate the fact that TMDLs are being done, the EPA backstop date in all three basins is not until March 31, 2008. Therefore, it does not make sense to push so many plans forward in such a short time; to do so simply weakens the public participation process.

Thank you for your serious consideration of my request for a 60-day extension of the comment period on these proposed TMDLs. I look forward to your response.

Sincerely,

Briana Kerstein
145 River Bend Dr.
River Ridge, LA 70123

EPA Response:
EPA received requests from the Gulf Restoration Network and six individuals for a 60-day extension of the comment period on the 85 draft TMDLs in Louisiana. EPA will not extend the original comment period, however, the Gulf Restoration Network and others may submit comments after the closing date (i.e., August 21, 2006) of the comment period until October 20, 2006. EPA will review and respond to comments received between August 22, 2006 and October 20, 2006, and may consider revising or modifying these TMDLs if appropriate.

2. Comment Letter #2:

RE: Request for comment period extension on 85 Louisiana TMDLs
From: Wendy King [wking@tulane.edu]
Date Received: 8/9/06

Dear Ms. Smith
As a citizen concerned about local water quality and how the United States Environmental Protection Agency proposes to clean up polluted waters, I respectfully request a 60-day extension to the comment period for the 85 TMDLs prepared by EPA Region 6 for waters listed in the Red River, Sabine River, and Terrebonne Basins of Louisiana, announced in the Federal Register on July 20, 2006.

In order for there to be meaningful public comment on these TMDLs, there must be adequate time for each one to be analyzed. The fact that all 85 TMDLs are in seven documents makes reviewing the TMDLs more difficult and time consuming. In order to thoroughly analyze and tease out information for each TMDL it will take a significant amount of time and effort, extending past the current comment deadline of August 21.

While I appreciate the fact that TMDLs are being done, the EPA backstop date in all three basins is not until March 31, 2008. Therefore, it does not make sense to push so many plans forward in such a short time; to do so simply weakens the public participation process.

Thank you for your serious consideration of my request for a 60-day extension of the comment period on these proposed TMDLs. I look forward to your response.

Our state's residents are entitled to clean waterways, and to the right to read, analyze and comment on proposed regulations affecting those waterways. A 30-day public comment period is insufficient time for Louisiana's residents to read, analyze, and comment on such complex regulations, that affect our state's waterways.

Sincerely,

Wendy King
2120 Audubon Street
New Orleans, LA 70118

EPA Response:
Please see response to Comment Letter #1 in Section 1.

3. Comment Letter #3:

RE: Request for comment period extension on 85 Louisiana TMDLs
From: Jesse Bahm [jbahm1@lsu.edu]
Date Received: 8/9/06

Dear Ms. Smith
As a citizen concerned about local water quality and how the United States Environmental Protection Agency proposes to clean up polluted waters, I respectfully request a 60-day extension to the comment period for the 85 TMDLs prepared by EPA Region 6 for waters listed in the Red River, Sabine River, and Terrebonne Basins of Louisiana, announced in the Federal Register on July 20, 2006.

In order for there to be meaningful public comment on these TMDLs, there must be adequate time for each one to be analyzed. The fact that all 85 TMDLs are in seven documents makes reviewing the TMDLs more difficult and time consuming. In order to thoroughly analyze and tease out information for each TMDL it will take a significant amount of time and effort, extending past the current comment deadline of August 21.

While I appreciate the fact that TMDLs are being done, the EPA backstop date in all three basins is not until March 31, 2008. Therefore, it does not make sense to push so many plans forward in such a short time; to do so simply weakens the public participation process.

Thank you for your serious consideration of my request for a 60-day extension of the comment period on these proposed TMDLs. I look forward to your response.

Sincerely,

Jesse Bahm
711 Concordia
Baton Rouge, LA 70806

EPA Response:
Please see response to Comment Letter #1 in Section 1.

4. Comment Letter #4:

RE:	Request for comment period extension on 85 Louisiana TMDLs
From:	Matt Rota [matt@healthygulf.org]
Date Received:	8/9/06

Dear Ms. Smith—

Attached please find a request to extend the public comment period on the 85 Louisiana TMDLs announced on July 20, 2006 in the Federal Register. I look forward to your response.

Sincerely,

Matt Rota
Gulf Restoration Network
Water Resources Program Director

PO Box 2245

EPA Response:
Please see response to Comment Letter #1 in Section 1.

5. Comment Letter #5:

RE: Request for comment period extension on 85 Louisiana TMDLs
From: Donald Bradburn [bradburnd@touro.com]
Date Received: 8119/06

Dear Ms. Smith
As a citizen concerned about local water quality and how the United States Environmental Protection Agency proposes to clean up polluted waters, I respectfully request a 60-day extension to the comment period for the 85 TMDLs prepared by EPA Region 6 for waters listed in the Red River, Sabine River, and Terrebonne Basins of Louisiana, announced in the Federal Register on July 20, 2006.

In order for there to be meaningful public comment on these TMDLs, there must be adequate time for each one to be analyzed. The fact that all 85 TMDLs are in seven documents makes reviewing the TMDLs more difficult and time consuming. In order to thoroughly analyze and tease out information for each TMDL it will take a significant amount of time and effort, extending past the current comment deadline of August 21.

While I appreciate the fact that TMDLs are being done, the EPA backstop date in all three basins is not until March 31, 2008. Therefore, it does not make sense to push so many plans forward in such a short time; to do so simply weakens the public participation process.

Thank you for your serious consideration of my request for a 60-day extension of the comment period on these proposed TMDLs. I look forward to your response.

Sincerely,

Donald Bradburn
1401 Foucher Street
New Orleans, LA 70115

EPA Response:
Please see response to Comment Letter #1 in Section 1.

6. Comment Letter #6:

RE: Request for comment period extension on 85 Louisiana TMDLs
From: Amado Murillo [madillo10@yahoo.com]
Date Received: 8/18/06

Dear Ms. Smith
As a citizen concerned about local water quality and how the United States Environmental Protection Agency proposes to clean up polluted waters, I respectfully request a 60-day extension to the comment period for the 85 TMDLs prepared by EPA Region 6 for waters listed in the Red River, Sabine River, and Terrebonne Basins of Louisiana, announced in the Federal Register on July 20, 2006.

In order for there to be meaningful public comment on these TMDLs, there must be adequate time for each one to be analyzed. The fact that all 85 TMDLs are in seven documents makes reviewing the TMDLs more difficult and time consuming. In order to thoroughly analyze and tease out information for each TMDL it will take a significant amount of time and effort, extending past the current comment deadline of August 21.

While I appreciate the fact that TMDLs are being done, the EPA backstop date in all three basins is not until March 31, 2008. Therefore, it does not make sense to push so many plans forward in such a short time; to do so simply weakens the public participation process.

Thank you for your serious consideration of my request for a 60-day extension of the comment period on these proposed TMDLs. I look forward to your response.

Sincerely,

Amado Murillo
735 Constantinople St
New Orleans, LA 70115

EPA Response:
Please see response to Comment Letter #1 in Section 1.

7. Comment Letter #7:

RE:	Request for comment period extension on 85 Louisiana TMDLs
From:	Matt Rota [matt@healthygulf.org]
Date Received:	8/21/06

Ms. Smith—

Please find attached comments regarding the 85 proposed TMDLs for waters listed in the Red River, Sabine River, and Terrebonne Basins of Louisiana. Please contact me if you have any questions.

Sincerely,

Matt Rota
Gulf Restoration Network

Water Resources Program Director
PO Box 2245
New Orleans, LA 70176
(p) 504-525-1528 x206
(f) 504-525-0833

EPA Response:
Please see Section 2.

8. Comment Letter #8:

RE: Request for comment period extension on 85 Louisiana TMDLs
From: Emelise Cormier [emelise.cormier@la.gov]
Date Received: 8/21/06

Dear Ms. Smith:

The Louisiana Department of Environmental Quality has reviewed the draft TMDLs prepared for EPA by contractors, TetraTech and FTN, for various Louisiana waterbodies in Red River, Sabine River, and Terrebonne Basins. Notice of these TMDLs was published in the Federal Register on July 20. LDEQ hereby submits comments on these TMDLs via this email. LDEQ's comments are provided in the attached documents.

If you have any questions or difficulty with the attachments, please contact me.

Sincerely,
Emelise Cormier
Senior Environmental Scientist
Water Quality Assessment Division
Louisiana Department of Environmental Quality
Phone: (225) 219-3554

EPA Response:
Please see Sections 3 and 4.

2. RESPONSES TO THE GULF RESTORATION NETWORK COMMENTS

GULF RESTORATION NETWORK

UNITED FOR A HEALTHY GULF

338 Baronne St., Suite 200, New Orleans, LA 70112
Mailing Address: P.O. Box 2245, New Orleans, LA 70176
Phone: (504) 525-1528 Fax: (504) 525-0833
www.healthygulf.org

August 21, 2006

Diane Smith
Environmental Protection Specialist
Water Quality Protection Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Ave.
Dallas, TX 75202-2733
[sent electronically to: smith.diane@epa.gov]

Re: 85 TMDLs for waters listed in the Red River, Sabine River, and Terrebonne Basins of Louisiana

Dear Ms. Smith,

On behalf of the Gulf Restoration Network (GRN), I am submitting the following comments regarding the total maximum daily loads (TMDLs) for the above-mentioned basins. The GRN is a diverse coalition of individual citizens and local, regional, and national organizations committed to uniting and empowering people to protect and restore the resources of the Gulf of Mexico. Members of the GRN are located in each of the states along the Gulf of Mexico.

Due to the inappropriately short comment period for these TMDLs (see comment 1, below), the following comments are not comprehensive and will primarily include over-arching comments on the TMDLs and examples focusing on the Terrebonne Basin.

1. Due to the extremely large number of TMDLs released on a single date, a 30-day Comment period was not sufficient to ensure public participation.

Throughout the comment period, the GRN and other citizens and organizations submitted requests for a comment period extension for the 85 Louisiana TMDLs. The 30-day comment period that was given was not enough time to look at each of these TMDLs adequately. Given this extremely short timeframe, 30 days was simply not enough time to tease out and comment on each of the TMDLs individually. Even though we understand that EPA has internal deadlines and mandates, the actual backstop date for all three basins in these TMDLs is not until March 31,

2008. Therefore, it does not make sense to push so many plans forward in such a short time; to do so simply weakens the public participation process.

Due to the previously submitted comments, the EPA representatives stated that although they will not extend the original comment period, the GRN and others may comment after the close of the comment period until October 20, 2006. EPA agreed that it will review and respond to those comments and that an EPA decision to revise or to decline to revise a TMDL in response to those comments shall be subject to appeal as final agency action. While we still disagree with the decision to not formally extend the comment period, we expect EPA to respect the agreement that was reached and *be sure that the agreement is displayed prominently in the initial finalized TMDLs*.

EPA Response:
Please see response to Comment Letter #1 in Section 1.

2. Point sources in the Terrebonne TMDLs appear to be left out.

After a quick look at all suspected sources of impairment for Fecal Coliform in the Terrebonne Basin, several subsegments (120502, 120503, 120504, 120507, 120602, 120605, 120703, and 120707) do not have point source discharge information included, even though suspected Fecal Coliform sources for these subsegments include sources such as "package plant or other permitted small-flow discharges" and "total retention domestic sewage lagoons." If there are indeed permitted dischargers in these subsegments, they should be included in the TMDLs. If these dischargers do not exist, that issue must be addressed in the document in order to reduce confusion.

EPA Response:
The suspect sources of impairment identified in Table ES-1 were based upon information included in Louisiana's 2004 303(d) List. During the initial TMDL development process, information on point sources was obtained by reviewing available LDEQ records and databases. Based upon the review of the available information, there were no permitted wastewater point sources identified in subsegments 120502, 120503, 120504, 120507, 120602, 120605, 120703 or 120707. However, there were septic systems (i.e., on-site treatment systems) that were identified for these subsegments as indicated in Table 2-11. As such, there were no permitted dischargers in these referenced subsegments that were addressed in the TMDLs. Language will be added to Section 2.6 in order to clarify this point.

Additional searches for permitted wastewater point sources are currently being conducted. Permitted wastewater point sources were identified in subsegment 120504 and will be included in the final TMDL report. The point source search will continue after the TMDL is finalized. If additional point sources are found, the report will be revised. Currently, the TMDLs contain a Future Growth component that can be used for any points sources not identified.

In addition, subsegments 120503, 120504, 120507, 120602, 120605, and 120707 have been identified to contain MS4 permitted discharges.

3. Limits should be implemented to reduce Fecal Coliform pollution.

The Terrebonne TMDLs document states that if Fecal Coliform dischargers are within the water quality criteria at end-of-pipe, no reductions are necessary. We disagree. If all dischargers were allowed to discharge at levels near the maximum in the water quality criteria, the cumulative impact would result in an impaired water body. We believe that more strict limits should be placed on dischargers in these water bodies that are impaired for pathogens.

EPA Response:
According to the State's Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, numerical criteria as specified in LAC 33:IX.1113.C are applied for the appropriate designated use(s) of each water body. Both aquatic life and human health criteria are reviewed and the most stringent applied for the corresponding designated use of each water body. The standards for fecal coliform have been established to protect the designated uses of the waterbody, and LDEQ establishes permit limitations for fecal coliform bacteria to meet criteria at end-of-pipe to ensure that water body standards are not exceeded. By limiting point source discharges to end-of-pipe criteria (point-of-discharge), EPA believes there is no reasonable potential for the discharge to cause or contribute to a violation of water quality standards.

4. In the Executive Summary for the Terrebonne TMDLs, the table of 303(d) listing information has a duplication.

The subsegment number 120101 was counted twice in Table ES-1 on page iii of the Terrebonne TMDLs.

EPA Response:
This will be corrected in the final report.

Thank you for taking the time to consider the above comments. Also, if specific issues are found by the GRN or other members of the public, they will be submitted by October 20, 2006. If you have any question, please feel free to contact me.

Respectfully submitted,

[sent electronically]

Matt Rota
Water Resources Program Director
Gulf Restoration Network

CC: Michael Morton, EPA Region 6 *[sent electronically]*
Emelise Cormier, Louisiana Department of Environmental Quality *[sent electronically]*
Tulane Environmental Law Clinic *[sent electronically]*
Louisiana Environmental Action Network *[sent electronically]*
Sierra Club, Delta Chapter *[sent electronically]*

3. RESPONSES TO SET 1 OF LDEQ COMMENTS

Louisiana Department of Environmental Quality's (LDEQ) Comments Concerning the following TMDLs submitted to EPA:

- TMDL for Turbidity for Vinton Waterway, Louisiana (Subsegment 1100601)
- TMDLs for Turbidity, Sulfate, and TDS for Old Saline Bayou, Larto Lake, Bayou Cocodrie, and Cocodrie Lake, Louisiana (Subsegments 101503, 101505, 101601 and 101602)
- TMDLs for Turbidity, Sediment, TSS, Chloride, Sulfate, and TDS for Red River Basin, Louisiana (Subsegments 100309, 100602, and 100603)
- TMDLs for Sedimentation/Siltation, Turbidity, and TDS for Black Lake Bayou and Kepler Creek, Louisiana (Subsegment 100701 and 100704)

These TMDLs developed by – FTN Associates, Ltd., July 6, 2006.
LDEQ comments received on August 21, 2006
EPA - Responses in bold blue.

3.1 General Comments

1. EPA/FTN used weak correlations between TSS and turbidity to develop linear regression equations. From turbidity's numeric criteria, these equations were used to determine numeric criteria for TSS (resulting in EPA assigning numeric criteria for TSS to Louisiana streams, which conflicts with LDEQ's regulatory intentions). LDEQ takes exception to EPA's continued use of a TMDL "endpoint" in the absence of promulgated water quality criteria. TMDL's seriously impact both point and nonpoint sources and as such should not be capriciously developed for substances for which no numerical water quality criteria exists. While the methodology used for developing the endpoint is the methodology LDEQ uses for establishing water quality criteria, use of this number as the basis for a TMDL without promulgation is unacceptable.

EPA Response:
The correlation coefficients for the TSS-turbidity regressions in these four draft reports were as follows:

- **Station 1168 (Vinton Waterway):** $R^2 = 0.79$
- **Station 1186 (Black Lake Bayou):** $R^2 = 0.87$
- **Station 371 (Saline Bayou):** $R^2 = 0.58$
- **Station 1226 (Larto Lake):** $R^2 = 0.62$
- **Station 1225 (Larto Bayou):** $R^2 = 0.72$
- **Station 1228 (Bayou Cocodrie):** $R^2 = 0.93$
- **Station 1229 (Cocodrie Lake):** $R^2 = 0.90$
- **Station 1193 (Cross Bayou):** $R^2 = 0.61$
- **Station 1207 (Boggy Bayou):** $R^2 = 0.50$
- **Station 279 (Brushy Bayou):** $R^2 = 0.74$
- **Station 1184 (Wallace Lake):** $R^2 = 0.48$

When LDEQ first submitted this comment to EPA in the fall of 2005, the correlation coefficients for the TSS-turbidity regressions ranged from 0.93 (station 1228) to 0.31 (station 1184). Since that time, some of the regressions were revised prior to the public comment period in order to incorporate additional LDEQ data that were not available during 2005. For Wallace Lake, the revised regression is not as strong as for other stations, but the regression still results in a TMDL that is consistent with the observed data (i.e., the TMDL calls for a 0% reduction, which is consistent with the fact that all observed turbidity values are below the numeric criterion of 25 NTU for lakes).

For every station except Wallace Lake, the correlation coefficient was at least 0.50, which indicates that the majority of the variation in turbidity is accounted for by variation in TSS. EPA believes that this correlation is acceptable for using TSS to express the turbidity TMDLs. There will always be some uncertainty in the relationship between turbidity and TSS, just as there will always be some uncertainty in relationships between DO and oxygen demanding parameters (BOD, ammonia, and SOD). EPA Region 6 has a policy of expressing TMDLs as mass per unit time whenever possible because of specific litigation in recent years. Expressing the turbidity TMDLs as allowable loads of TSS is certainly not intended to be an attempt by EPA to assign or promulgate numeric criteria for Louisiana waterbodies. It is a widely accepted practice to express TMDLs using surrogate parameters for which there are no numeric criteria in the State water quality standards.

2. LDEQ strongly objects to establishing a TMDL for a constituent which does not have a numerical water quality criterion such as turbidity.

EPA Response:
In this task order, EPA has taken waterbodies that are impaired due to turbidity and developed TMDLs expressed in terms of TSS, which EPA believes is often the primary cause of turbidity violations. In other words, the impairment is based on a parameter for which there is a numeric criterion and the TMDL is expressed using a parameter that is causing the impairment but has no numeric criterion. For cases where TSS is truly the primary cause for turbidity, EPA believes that this is conceptually similar to DO TMDLs developed by LDEQ and others. LDEQ takes waterbodies that are impaired due to DO (for which there is a numeric criterion) and expresses the TMDLs in terms of CBOD, NBOD, and SOD. These three parameters are the primary cause of DO violations but there are no numeric criteria for any of the three parameters. In both cases, the subsegment is considered impaired due to the parameter that has a numeric criterion (turbidity or DO), and the TMDLs are being expressed as allowable loads of other parameters for which there is no numeric criterion (TSS or BOD).

3. All proposed total maximum daily loads (TMDLs) are based upon limited, and potentially misrepresentative, flow data. By definition, load-duration curves describe the contribution of each constituent as a function of overland flow. Most of the data trend shows an inverse relationship between flows and constituent concentrations (i.e., constituent concentrations decrease with increasing flow). This trend indicates that impairments are contributed by a constant background source. In particular, the extremely weak correlation between turbidity and

TSS in Lake Wallace, along with the Lake's shallow and serpentine morphology, suggests the more likely relationship between turbidity and wind speed, which is not mentioned in the draft report. Because of these factors the proposed BMPs, which seek to reduce constituent concentrations by mitigating overland inflows, could fail to yield even the slightest reduction in the targeted impairments.

EPA Response:
Load duration curves actually describe contributions of pollutants from both surface runoff and subsurface inflow, not just surface runoff (overland flow). Load duration curves are equally valid whether the pollutant tends to have higher concentrations at low flows or high flows. In fact, an advantage of the load duration approach is the ability to show allowable loads for a wide range of flow conditions. The load duration curves identify the flow conditions for which the greatest exceedances of water quality criteria are occurring. This information should be considered when BMPs are selected in the future. Specific BMPs have not been proposed or recommended in these reports.

Concerning the comment about Lake Wallace, the regression between turbidity and TSS has been updated since LDEQ first submitted this comment in the fall of 2005 (as noted in one of the responses above).

4. Many of the load duration curves are based on the relationship between flow and drainage area. This relationship is not valid for most of the targeted waterbodies. Most of these waterbodies are tidally influenced or they are controlled by man-made control structures.

EPA Response:
Relationships between flow and drainage area are often poor for low flow conditions (e.g., 7Q10), but they are usually acceptable for average annual flows and annual flow durations. For this task order, flows for ungaged streams were estimated using measured flows from streams that were nearby, had similar topography and land use, and did not have significant regulation of flows by man-made control structures. Load duration curves were not used for tidally influenced waterbodies such as Vinton Waterway. Some of the waterbodies in these TMDLs are affected by man-made structures, but those effects were not considered to be significant on an annual basis.

5. There appear to be more USGS sites with viable flow data than were used in these reports. In some cases, inappropriate USGS sites were selected for flow data, based on location.

EPA Response:
Three maps have been generated to show the USGS flow gages that were and were not used in the reports by FTN and Tetra Tech for this project. These three maps are attached to these comments as Figures 1-3. Also attached to these comments is a spreadsheet printout (Tables 1-3) that lists the flow gages shown on the maps and specifies one or more reasons for rejecting each gage that was not used in these reports. As shown in Tables 1-3, many of the flow gages that were close to the subsegment of interest were rejected because the period of record ended prior to the period when water quality data were collected. Flow data are required on each water quality

sampling day in order to plot observed loads on the load duration plot. Some gages were also rejected because the drainage area was very large and/or the flow was significantly regulated.

6. The R^2 values associated with the correlations between TSS and turbidity would be considered unacceptable for any valid scientific analysis.

EPA Response:
EPA disagrees with this comment. Please see response to General Comment #1 in Section 3.1.

7. The landuse data used in many of these reports appears to be 10-15 years old. Much of the landuse has changed within that time due to agricultural practices, subsidence, and urban expansion.

EPA Response:
EPA recognizes that the land use data are old, but no recent data are available at this time for the Red River basin. This has been acknowledged by LDEQ. Because the land use data are provided as supplementary information and are not used in the TMDL calculations, the age of the land use data does not affect the TMDL results.

3.2. Specific Comments: TMDLs for Turbidity, Sulfate, and TDS for Old Saline Bayou, Larto Lake, Bayou Cocodrie, and Cocodrie Lake, Louisiana (Subsegments 101503, 101505, 101601 and 101602)

1. Old Saline Bayou (subsegment 101503) is cut off by levees from Saline Bayou (subsegment 101504) yet the data used to assess Old Saline Bayou and to create the TMDL came from LDEQ water quality station 371 which is located on Saline Bayou in subsegment 101504. This is inappropriate. LDEQ is in the process of modifying these subsegments to more appropriately reflect the drainage areas.

2. Section 3.4 Relationships between TSS and Turbidity, page 3-3, paragraph 2, sentence 3: The sentence reads, “For example, for station 1229, 90% of the variation in TSS is accounted for by turbidity and the remaining 10% of variation in turbidity is unexplained.” The sentence should read, “For example, for station 1229, 90% of the variation in turbidity is accounted for by TSS and the remaining 10% of the variation in turbidity is unexplained.” Turbidity is a result of TSS.

3. Bayou Cocodrie (101601) appears on the 2004 303(d) list as not supporting FWP and ONR due to turbidity from irrigated and non-irrigated crop production. This is the only TMDL in this set which was required to be completed.

4. Larto Lake (101505) does appear on the 2004 303(d) list as not supporting FWP, but the impairment is due to Mercury and is not part of the scope of this TMDL project. The turbidity, sulfates and TDS impairments for Larto Lake only appear on the IR and call for a UAA instead of an actual TMDL. Larto Lake will be listed in the 2006 IR in category 4c because LDEQ has determined that the criteria exceedences are due to natural conditions.

5. Neither Old Saline Bayou (101503) nor Cocodrie Lake (101602) appears on the 2004 303(d) list. They are both listed on the IR for turbidity impairments, but again call for a UAA instead of an actual TMDL. Old Saline Bayou will be listed in category 2, insufficient data. Cocodrie Lake will be listed in the 2006 IR in category 4c because LDEQ has determined that the criteria exceedences are due to natural conditions.

EPA Response:
The typographical error noted in comment #2 above has been corrected in the final report.

All four of these subsegments (101503, 101505, 101601, and 101602) were listed as impaired due to turbidity (category 5) on the August 2004 draft version of the Louisiana Integrated Report, which was the latest assessment that was available when the scope of work was developed for this task order. However, for the final 2004 303(d) list, EPA agrees that Bayou Cocodrie (101601) is the only one of these four subsegments that is listed as impaired due to turbidity. As a result, this report will be revised to only cover 101601 and subsegments 101503, 101505, and 101602 will be removed from the report. EPA currently plans to establish a turbidity TMDL for subsegment 101601 and not for subsegments 101503, 101505, and 101602.

3.3. Specific Comments: TMDLs for Turbidity, Sediment, TSS, Chloride, Sulfate, and TDS for Red River Basin, Louisiana (Subsegments 100309, 100602, and 100603)

1. On Page 2-4 in section 2.6, the rationale for achieving the proposed 65% reduction in turbidity in Lake Wallace is to implement BMPs on Boggy Bayou, with the explicit assumption that the lake cannot meet a lower standard "than the upstream water body that flows into it." That assumption has no merit: lacustrine velocities over the extended reach of the lake ensure that all settleable particles which enter the lake from Boggy Bayou will have been removed well above sampling station 1184. That fact, in combination with Wallace Lake's shallow depth and consequent susceptibility to wave action suggest that turbidity may be positively correlated to wind speed, which would also explain the weak correlation between TSS and turbidity.

EPA Response:
After LDEQ first submitted this comment to EPA in the fall of 2005, the TMDL for Wallace Lake was revised prior to the public comment period so that the recommended percent reduction for TSS loads (0%, not 65%) is based on the data for Wallace Lake rather than the data for Boggy Bayou. This revision was based on the fact that the data for Boggy Bayou are not representative of Wallace Lake.

2. Based on the 2006 draft integrated report, Wallace Lake (subsegment 100603) is no longer listed as impaired due to sedimentation/siltation or turbidity and LDEQ recommends that the TMDLs be withdrawn.

EPA Response:

EPA is currently considering LDEQ's recent recommendation to de-list Wallace Lake for turbidity. However, the 2006 IR is not approved by EPA at this time and by law EPA is required to develop TMDLs for the 303(d) listed waterbodies and pollutants.

3. Cross Bayou (100309) and Boggy Bayou (100602) will be listed in category 2, insufficient data in the 2006 IR.

EPA Response:
EPA is currently considering LDEQ's recent recommendation to move Cross Bayou and Boggy Bayou to category 2. However, the 2006 IR is not approved by EPA at this time and by law EPA is required to develop TMDLs for the 303(d) listed waterbodies and pollutants.

3.4. Specific Comments: TMDLs for Sedimentation/Siltation, Turbidity, and TDS for Black Lake Bayou and Kepler Creek, Louisiana (Subsegment 100701 and 100704)

1. Based on the 2006 draft integrated report, Kepler Creek (subsegment 100704) is no longer listed as impaired due to total dissolved solids (TDS), and LDEQ recommends that the TMDL be withdrawn.

EPA Response:
EPA is currently considering LDEQ's recent recommendation to de-list Kepler Creek for TDS. However, the 2006 IR is not approved by EPA at this time and by law EPA is required to develop TMDLs for the 303(d) listed waterbodies and pollutants

2. Black Lake Bayou (100701) will be listed in category 2, insufficient data in the 2006 IR.

EPA Response:
EPA is currently considering LDEQ's recent recommendation to move Black Lake Bayou to category 2. However, the 2006 IR is not approved by EPA at this time and by law EPA is required to develop TMDLs for the 303(d) listed waterbodies and pollutants.

4. RESPONSES TO SET 2 OF LDEQ COMMENTS

Louisiana Department of Environmental Quality's (LDEQ) Comments Concerning the following TMDLs submitted to EPA:

- TMDLs for Fecal Coliform Bacteria, Chlorides, Sulfates, Total Dissolved Solids (TDS), Sediment, Total Suspended Solids (TSS), and Turbidity for Selected Subsegments in the Terrebonne River Basin, Louisiana (Subsegments 120101, 120102, 120104, 120105, 120106, 120109, 120110, 120111, 120112, 120201, 120206, 120301, 120502, 120503, 120504, 120506, 120507, 120508, 120602, 120605, 120606, 120701, 120703, 120707, 120708)
- TMDLs for Fecal Coliform Bacteria, Chlorides, Sulfates, Total Dissolved Solids (TDS), and Turbidity for Selected Subsegments in the Red River Basin, Louisiana (Subsegments 100306, 100406, 100707, 100708, 100709, 100710, 100801, 100804, 100901, 100101, 101103, 101301, 101303, 101401)
- TMDL for Fecal Coliform Bacteria for Selected Subsegments in the Sabine River Basin, Louisiana (Subsegments 110202, 110401, 110402, 110501, and 110504)

These TMDLs were developed by – Tetra Tech, Inc., July 7, 2006
LDEQ comments received on August 21, 2006
EPA - Responses in bold blue.

4.1 General Comments

1. EPA/Tetra Tech used weak correlations between TSS and turbidity to develop linear regression equations. From turbidity's numeric criteria, these equations were used to determine numeric criteria for TSS (resulting in EPA assigning numeric criteria for TSS to Louisiana streams, which conflicts with LDEQ's regulatory intentions). LDEQ takes exception to EPA's continued use of a TMDL "endpoint" in the absence of promulgated water quality criteria. TMDL's seriously impact both point and nonpoint sources and as such should not be capriciously developed for substances for which no numerical water quality criteria exists. While the methodology used for developing the endpoint is the methodology LDEQ uses for establishing water quality criteria, use of this number as the basis for a TMDL without promulgation is unacceptable.

EPA Response:
Comment noted. EPA is required by law to prepare TMDL for 303(d) listed waterbodies and pollutants. It is EPA policy to use a surrogate for TMDLs when a numerical standard is not available. The number represents a target and not an established water quality standard.

The correlation coefficients for the TSS-turbidity regressions are:

Station 971 (Chamberlin Canal): $R^2 = 0.24$
Station 972 (Bayou Plaquemine): $R^2 = 0.66$
Station 968 (Bayou Portage): $R^2 = 0.90$

Station 969 (Bayou Poydras): $R^2 = 0.77$
Station 1223 (Buhlow Lake): $R^2 = 0.66$

For every station except Chamberlin Canal, the correlation coefficient was at least 0.66, which indicates at least two-thirds of the variation in turbidity is accounted for by variation in TSS. EPA believes that this correlation is acceptable for using TSS to express the turbidity TMDLs. The correlation trend for Chamberlin Channel follows the same increasing trend as the others. It was decided to use the same procedure for all 5 subsegments to maintain consistency and because of the similar trends and the correlation coefficients of the other four subsegments.

There will always be some uncertainty in the relationship between turbidity and TSS, just as there will always be some uncertainty in relationships between DO and oxygen demanding parameters (BOD, ammonia, and SOD). EPA Region 6 has a policy of expressing TMDLs as mass per unit time whenever possible because of specific litigation in recent years. Expressing the turbidity TMDLs as allowable loads of TSS is not intended to be an attempt by EPA to assign numeric criteria for Louisiana waterbodies. It is a widely accepted practice to express TMDLs using surrogate parameters for which there are no numeric criteria in the State water quality standards.

2. LDEQ strongly objects to establishing a TMDL for a constituent which does not have a numerical water quality criterion such as turbidity.

EPA Response:
Numerical turbidity criteria have been defined for certain waterbodies and for non-flowing waterbodies (e.g., lakes, reservoirs). In this task order, waterbodies impaired due to turbidity have had TMDLs developed expressed in terms of TSS, which is often believed to be the primary cause of turbidity violations. The impairment is based on a parameter for which there is a numeric criterion and the TMDL is based on a parameter that is causing the impairment but has no numeric criterion. For cases where TSS is truly the primary cause for turbidity, this is conceptually similar to DO TMDLs developed by LDEQ and others. LDEQ has taken waterbodies listed as impaired for DO and expresses the TMDLs in terms of CBOD, NBOD, and SOD. These three parameters are the primary cause of DO violations, however there are no numeric criteria for the three parameters. In both cases, the subsegment is considered impaired due to the parameter that has a numeric criterion (turbidity or DO), and the TMDLs are being expressed as allowable loads of other parameters for which there is no numeric criterion (TSS or BOD).

3. All proposed total maximum daily loads (TMDLs) are based upon limited, and potentially misrepresentative, flow data. By definition, load-duration curves describe the contribution of each constituent as a function of overland flow. Most of the data trend shows an inverse relationship between flows and constituent concentrations (i.e., constituent concentrations decrease with increasing flow). This trend indicates that impairments are contributed by a constant background source. Because of these factors the proposed BMPs, which seek to reduce

constituent concentrations by mitigating overland inflows, could fail to yield even the slightest reduction in the targeted impairments.

EPA Response:
As stated in the reports, it was difficult to identify trends in the data because of the limited data available. Load duration curves inherently account for a range of conditions, thus accounting for all existing flows and base reductions on all available data. High concentrations during low-flows can also be attributed to point sources, identified or not identified. In addition, the TMDLs are not intended to be an implementation study and therefore do not recommend BMPs. An additional study will be required to specifically identify pollutant sources and BMPs.

4. Many of the load duration curves are based on the relationship between flow and drainage area. This relationship is not valid for most of the targeted waterbodies. Most of these waterbodies are tidally influenced or they are controlled by man-made control structures.

EPA Response:
Relationships between flow and drainage area are often poor for low flow conditions (e.g., 7Q10), but they are usually acceptable for average annual flows and annual flow durations. For this task order, flows for ungaged streams were estimated using measured flows from streams that were nearby, had similar topography and land use, and did not have significant regulation of flows by man-made control structures. Load duration curves will not be used for tidally influenced waterbodies, such as the Terrebonne basin subsegments. Unfortunately, detailed flow information is not available for most of the watersheds requiring TMDLs; therefore the best information available was used.

5. There appear to be more USGS sites with viable flow data than were used in these reports. In some cases, inappropriate USGS sites were selected for flow data, based on location.

EPA Response:
Three maps have been generated to show the USGS flow gages that were and were not used in the reports by FTN and Tetra Tech for this project. These three maps are attached to these comments as Figures 1-3. Also attached to these comments is a spreadsheet printout (Tables 1-3) that lists the flow gages shown on the maps and specifies one or more reasons for rejecting each gage that was not used in these reports. As shown in Tables 1-3, many of the flow gages that were close to the subsegment of interest were rejected because the period of record ended prior to the period when water quality data were collected. Flow data are required on each water quality sampling day in order to plot observed loads on the load duration plot. Some gages were also rejected because the drainage area was very large and/or the flow was significantly regulated.

6. The R^2 values associated with the correlations between TSS and turbidity would be considered unacceptable for any valid scientific analysis.

EPA Response:
Please see response to General Comment #1 in Section 4.1.

7. The landuse data used in many of these reports appears to be 10-15 years old. Much of the landuse has changed within that time due to agricultural practices, subsidence, and urban expansion.

EPA Response:
Landuse was not used in the calculations of allocations, with the exception of determining contributions of MS4s. The landuse that was used was the most recent information available. Updated landuse information became available for southern Louisiana after the reports were submitted. This area includes the Terrebonne basin subsegments of interest. This information will be included in the final report. The updated information included only a small portion of the Red basin subsegments in the TMDL and mode the Sabine basin in the TMDL. Updated information was not used to maintain consistency in the landuse information throughout the basins. If preferred landuse coverage is available and provided, the reports can be updated accordingly.

4.2. Specific Comments: TMDLs for Fecal Coliform Bacteria, Chlorides, Sulfates, Total Dissolved Solids (TDS), Sediment, Total Suspended Solids (TSS), and Turbidity for Selected Subsegments in the Terrebonne River Basin, Louisiana (Subsegments 120101, 120102, 120104, 120105, 120106, 120109, 120110, 120111, 120112, 120201, 120206, 120301, 120502, 120503, 120504, 120506, 120507, 120508, 120602, 120605, 120606, 120701, 120703, 120707, 120708)

1. Based on the 2006 draft integrated report, Bayou Plaquemine (subsegment 120106) is no longer listed as impaired due to turbidity and LDEQ recommends that the TMDL be withdrawn.

EPA Response:
EPA is considering LDEQ's recent recommendation to delist Bayou Plaquemine for turbidity. However, the 2006 IR is not approved by EPA at this time and EPA is required by law to prepare TMDLs for 303(d) listed waterbodies and pollutants.

2. Based on the 2006 draft integrated report the following subsegments are no longer listed as impaired due to fecal coliform bacteria and LDEQ recommends that the TMDLs be withdrawn: Bayou Poydras (subsegment 120102), Intracoastal Waterway (subsegment 120109), Lower Grand River and Belle River (subsegment 120201), Grand Bayou and Little Grand Bayou (subsegment 120206), Bayou Chauvin (subsegment 120507), Bayou Pointe au Chien (subsegment 120605), Bayou Grand Caillou (subsegment 120701), and Bayou du Large (subsegment 120703).

EPA Response:
EPA is currently considering LDEQ's recent recommendation to delist the subsegments listed above for fecal coliform bacteria. However, 2006 IR is not approved by EPA at this time and EPA is required by law to prepare TMDLs for 303(d) listed waterbodies and pollutants.

4.3. Specific Comments: TMDLs for Fecal Coliform Bacteria, Chlorides, Sulfates, Total Dissolved Solids (TDS), and Turbidity for Selected Subsegments in the Red River Basin, Louisiana (Subsegments 100306, 100406, 100707, 100708, 100709, 100710, 100801, 100804, 100901, 100101, 101103, 101301, 101303, 101401) and Sabine River Basin (110504)

1. Based on the 2006 draft integrated report, Saline Bayou (subsegment 100801) is no longer listed as impaired due to fecal coliform bacteria and LDEQ recommends that the TMDL be withdrawn.

EPA Response:
EPA is currently considering LDEQ's recent recommendation to delist Saline Bayou for fecal coliform bacteria. However, 2006 IR is not approved by EPA at this time and EPA is required by law to prepare TMDLs for 303(d) listed waterbodies and pollutants.

2. Based on the 2006 draft integrated report, Cane River (subsegment 101101) is no longer listed as impaired due to chlorides and LDEQ recommends that the TMDL be withdrawn. This subsegment is still listed as impaired due to total dissolved solids (TDS), but LDEQ has determined that this is due to natural conditions or sources.

EPA Response:
EPA is currently considering LDEQ's recent recommendation to delist Cane River for chloride. However, 2006 IR is not approved by EPA at this time and EPA is required by law to prepare TMDLs for 303(d) listed waterbodies and pollutants.

3. The following subsegments will be listed under category 4c because DEQ has determined that the exceedences of the criteria for the pollutant of concern are due to natural conditions or natural sources (such as wildlife): Castor Creek (subsegment 100707), fecal coliform; Unnamed tributary to Castor Creek (intermittent) (100708), SO_4, TDS, pH; Grand Bayou (100709), fecal coliform, TDS; Cane River (101101) TDS and color; Iatt Creek (101303), TDS; Buhlow Lake (101401), turbidity; Larto Lake (101505), turbidity, TDS, SO_4; Cocodrie Lake (101602), turbidity; Bayou Anacoco (110504), fecal coliform.

EPA Response:
EPA is currently considering LDEQ's recent recommendation to delist the above listed subsegments. However, 2006 IR is not approved by EPA at this time and EPA is required by law to prepare TMDLs for 303(d) listed waterbodies and pollutants.